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| Notice of Allowability | Application No. | Applicant(s) | |
| | 09/686,304 | DENT, PAUL W. | |
| | Examiner | Art Unit | |
| | Emmanuel Bayard | 2631 | |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to 10/4/04.
2. ☒ The allowed claim(s) is/are 1-54 and 56-96.
3. ☒ The drawings filed on 04 October 2004 are accepted by the Examiner.
4. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - a) ☐ All b) ☐ Some* c) ☐ None of the:
 1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

* Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.

THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

5. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
 6. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
 - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
 - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
 - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
7. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

- | | |
|---|--|
| 1. <input type="checkbox"/> Notice of References Cited (PTO-892) | 5. <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 2. <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 6. <input type="checkbox"/> Interview Summary (PTO-413), Paper No./Mail Date _____. |
| 3. <input type="checkbox"/> Information Disclosure Statements (PTO-1449 or PTO/SB/08), Paper No./Mail Date _____ | 7. <input type="checkbox"/> Examiner's Amendment/Comment |
| 4. <input type="checkbox"/> Examiner's Comment Regarding Requirement for Deposit of Biological Material | 8. <input checked="" type="checkbox"/> Examiner's Statement of Reasons for Allowance |
| | 9. <input type="checkbox"/> Other _____. |

DETAILED ACTION

This is in response to amendment filed on 10/4/04 in which claims 1-54 and 56-96 are pending and claim 55 is canceled. The applicant's amendments have been fully considered therefore this case is in condition for allowance. In addition the pending claims have been renumbered as 1-95 respectively.

Allowable Subject Matter

The following is an examiner's statement of reasons for allowance: The prior art of record fail to anticipate or render obvious the following recited features. The following is a statement of reasons for the indication of allowable subject matter: A controller operatively associated with the variable error correction encoder, the variable symbol generator and the variable spreader, that selects respective combinations of coding rate, signal constellation and spreading code applied to the respective bit streams such that the spread symbol streams transmitted from the network station are spread according to mutually orthogonal spreading codes as recited in claim 1. A variable symbol generator that generates a symbol from a group of bits of the error correction encoded bit stream according to a selected one of the plurality of selectable signal constellation as recited in claim 16. A variable decoder that decodes the symbol estimate according to a selected combination of an error code and a signal constellation of a plurality of selectable signal constellation as recited in claim 48. Translating the second group of bits to the first group of bits; modulo-adding each bit of a binary spreading code of length N in turn to the translated second group of bits to generate a

revised translated second group of bits; generating a second symbol from the revised translated second group of bits using the signal constellation that maps the first group of bits and a complement of the first group of bits to diametrically opposite constellation points as recited in claims 56 and 67. Translating respective ones of the generated groups of bits to respective bit patterns using a one to one mapping such that given sub-groups of bits in the bit patterns have an arithmetic value indicative of the angular position of the symbols as recited in claim 62. Repeating a respective one of multi-bit symbols using the corresponding group of bits a respective number of times with the respective recipient and scrambling the repeated multi-bit symbols according to an orthogonal spreading code selected from a set of orthogonal spreading codes as recited in claim 65. Generating respective symbols according to a signal constellation from respective groups of bits of the encoded bit stream such that a first bit position of the groups of bits correlate to clusters of constellation points of the signal constellation and a second position of the groups of bits correlate to relative positions within the cluster of constellation points as recited in claims 45 and 90. Decoding the first and second symbols estimate according to a first and second combination of error correction code and a first and second signal constellation as recited in claim 93.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

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Conclusion

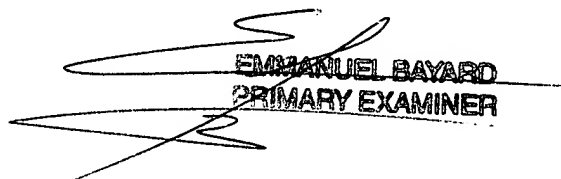
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Emmanuel Bayard whose telephone number is 571 272 3016. The examiner can normally be reached on Monday-Friday (7:Am-4:30PM) Alternate Friday off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mohammed Ghayour can be reached on 571 272 3021. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Emmanuel Bayard
Primary Examiner
Art Unit 2631

2/9/05


EMMANUEL BAYARD
PRIMARY EXAMINER